

**Method And Apparatus for Storing Image Information for
Multiple Sampling Operations in a Digital Pixel Sensor**

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ABSTRACT OF THE DISCLOSURE

A method for storing image information in a digital pixel sensor is disclosed for reducing the size of the memory needed to facilitate multiple sampling. An image sensor includes a sensor array of pixel elements generating pixel data in k bits and a data memory for storing pixel data of each pixel elements. In one embodiment, the data memory in the digital pixel sensor stores an m-bit time index value and the lower k-1 bits of the pixel data for pixel data exceeding the predetermined threshold level in all exposure times except the last. When pixel data in the last exposure time is captured, the data memory stores the time index value in less than m bits and stores the k-bit pixel data. The size of the data memory is minimized while preserving the image quality. The method of the present invention provides the benefits of reducing manufacturing cost and improving production yield.